

Toth et al.

S/N: 10/064,172

REMARKS

Claims 1-25 are pending in the present application. In the Office Action mailed December 31, 2003, the Examiner rejected claim 1-5 under 35 U.S.C. §102(b) as being anticipated by Edholm et al. (USP 3,717,768). The Examiner next rejected claims 12-17 under 35 U.S.C. §102(b) as being anticipated by Walters et al. (USP 4,288,695). Claims 18-20, 22, and 25 were rejected under 35 U.S.C. §102(b) as being anticipated by Moore (USP 4,181,858). Claim 23 was rejected under 35 U.S.C. §103(b) as being unpatentable over Moore. Claim 24 was rejected under 35 U.S.C. §103(a) as being unpatentable over Moor in view of Chiu (SUP 5,369,678).

Claims 1-5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Edholm et al. According to the Examiner, Edholm "teaches a pre-subject filter having variable attenuation in two dimensions for a radiographic imaging system". The Examiner further stated that Edholm et al. teaches "a first end having a first attenuation profile (lower portion of the absorption body); a second end having a second attenuation profile (upper portion of the absorption body), the second attenuation profile being larger than the first attenuation profile (figure 5a and 5b); and a body (7) connecting the first end and the second end". Accordingly, Applicant has amended claim 1 to further define the body connecting the first and the second end as having variable attenuation characteristics in at least two orthogonal cross-sections.

Edholm et al., as shown in Figs. 1, 2, and 4, teaches an x-ray filter that is positioned parallel to an object plane that extends across a subject's width. As best shown in Fig. 4, Edholm et al. teaches a filter constructed to have varying attenuation characteristics, as defined by the sinusoidal shape of the filter, that only vary across the width of the filter or along the filter's x-axis. However, Edholm et al. neither teaches nor suggests that the filter has varying attenuation characteristics along its length. More particularly, one skilled in the art upon review of the cross-sectional view of Fig. 5b would conclude that the filter is uniform in its shape along the filter's length or z-axis. As such, Applicant respectfully believes that claim 1, as amended herein, is patentably distinct from that taught and/or suggested by Edholm et al.

Applicant appreciates the Examiner's indication that claims 6-11 are allowable.

The Examiner then rejected claims 12-17 under 35 U.S.C. §102(b) as being anticipated by Walters et al. Walters et al. teaches a CT system having a shaped radiation filter. Similar to the filter described by Edholm et al., the filter disclosed by Walters et al. has varying attenuation characteristics along the filter's width. As such, Applicant respectfully believes that claim 12,

Toth et al.

S/N: 10/064,172

which has been amended herein, is patentably distinct from that taught and/or suggested by Walters et al. Specifically, claim 12 has been amended to define the filter as having variable attenuation along a subject's long axis. Claim 12 has been further amended to define the step of translating as occurring parallel to the subject's long axis to reduce radiation exposure to sensitive anatomical regions of the subject. One skilled in the art will readily appreciate that a subject's long axis or the z-axis is orthogonal to the axis of variable attenuation incorporated into the filter of Walters et al. See Fig. 2 of '695.

Claims 18-20, 22, and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by Moore. The Examiner also indicated that claim 21, if rewritten to incorporate the subject matter of the base claim and any intervening claims, would be allowable if rewritten in independent form. As such, Applicant has directed the cancellation of claims 18-20 and has incorporated the subject matter previously called for into claim 21. As such, Applicant respectfully believes that claim 21 is in condition for allowance. Applicant likewise believes that claims 22-24, which have been amended herein to correct their dependency, are also allowable as being dependent from an otherwise allowable claim.

Regarding the rejection of claim 25, Applicant has amended claim 25 to further define the pair of cam filters as being non-overlapping. Claim 25 has also been amended to clarify that the cam filters operate in tandem to manipulate a beam of radiation projected toward a subject to generate a desired radiation profile across a region-of-interest. As best shown in Fig. 1a of '858, Moore teaches a pair of overlapping and independently controllable filters that may be dynamically positioned within an x-ray fan beam to control radiation dose delivered to a subject. Moore further teaches that each wedge-shaped attenuating body has a shape such that each filter extends across the entire fan of radiation. See Col. 6, ll. 19-23. As such, one skilled in the art would conclude that, since each wedge body has a shape such that each wedge extends across the entire fan beam, the wedges must overlap regardless of wedge position. Accordingly, Applicant respectfully believes that the cam filter assembly called for in claim 25, which defines a pair of cam filters as being non-overlapping, to be patentably distinct from that taught and/or suggested by Moore.

Applicant respectfully requests entry and consideration of claims 26-27 newly presented herein to further define the present invention.

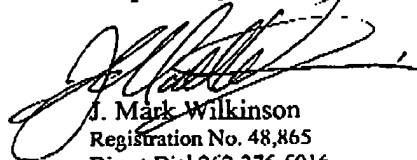
Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-27.

Toth et al.

S/N: 10/064,172

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



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